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(12) **United States Patent**  
**Kasahara et al.**(10) Patent No.: **US 6,414,660 B1**  
(45) Date of Patent: **Jul. 2, 2002**(54) **DISPLAY DEVICE AND METHOD OF CONTROLLING ITS BRIGHTNESS**(75) Inventors: **Mitsuhiro Kasahara, Hirakata; Yuichi Ishikawa, Ibaraki; Tomoko Morita, Hirakata, all of (JP)**(73) Assignee: **Matsushita Electric Industrial Co., Ltd., Osaka (JP)**

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(51) Int. Cl.<sup>7</sup> ..... **G09G 3/28**(52) U.S. Cl. .... **345/63; 345/690; 345/211**(58) Field of Search ..... **345/60, 63, 589, 345/690, 211, 204, 213**(56) **References Cited****U.S. PATENT DOCUMENTS**

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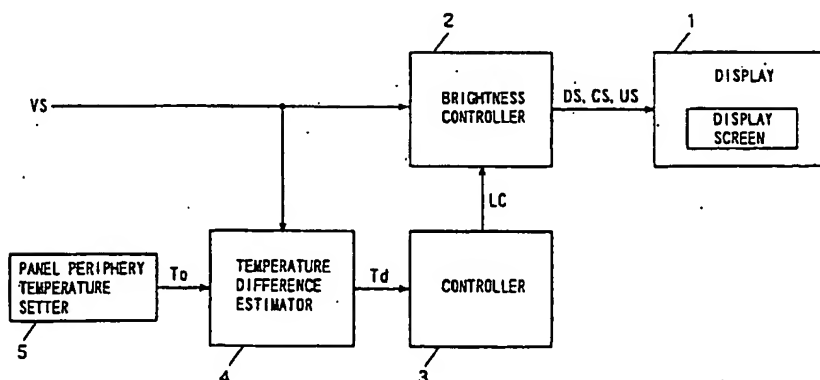
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(57) **ABSTRACT**

A temperature difference estimated value is found from a video signal using a temperature estimated value representing the temperature of the panel outer periphery of a display screen of a PDP and a reference value representing the temperature of the panel outer periphery of the PDP which is outputted from a panel periphery temperature setter by a temperature difference estimator, and the luminance of an image displayed on a display is controlled depending on the temperature difference estimated value by a controller and a brightness controller.

**8 Claims, 18 Drawing Sheets**

*Continued  
 Connection  
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